

ABSTRACT OF THE DISCLOSURE

In an optical transmission system, a multiplexer 100 frequency-division-multiplexes a plurality of signals, and outputs the resultant signal to an FM modulator 101. The FM modulator 101 converts the frequency-division-multiplexed signal into an FM modulated signal through frequency modulation using the frequency-division-multiplexed signal as an original signal. A frequency-divider 408 converts the FM modulated signal into a frequency-divided FM modulated signal whose frequency is  $1/2^n$  ( $n$  is an integer of not less than 1) the frequency of the FM modulated signal. An optical modulator 104 has a predetermined input-voltage vs. output-optical-power characteristic, and is biased at the minimum point (voltage) about the output optical power. The optical modulator 104 modulates an unmodulated light fed from a light source 103 with the applied frequency-divided FM modulated signal to produce an optical signal whose optical carrier component is suppressed, and sends the optical signal to an optical transmission line 105. An optical receiver 106 receives the optical signal, and square-law detects the signal to convert into an FM modulated signal. An FM demodulator 107 demodulates the FM modulated signal to reproduce the original frequency-division-multiplexed signal. This configuration makes it possible to narrow the bandwidth of an FM modulated signal while increasing the frequency deviation thereof, and realize high-quality signal transmission as a result.